## EAST Search History

| Ref# | Hits | Search Query   | DBs   | Default<br>Operator | Plurals | Time Stamp          |
|------|------|--|---|---------------------|---------|---------------------|
| S134 | 4    | (hafnium near2 nitride) with (gate electrode) and (nitrogen near10 hafnium near10 (ratio percent\$3))  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>11:01 |
| S135 | 4    | (hafnium near2 nitride "hf.<br>N") with (gate electrode) and<br>(nitrogen near10 hafnium<br>near10 (ratio percent\$3))                         | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>12:57 |
| S136 | 13   | (hafnium near2 nitride "hf.<br>N") with (gate electrode) and<br>((("N.sub.2") or nitrogen)<br>with hafnium) with (ratio<br>atom\$3 percent\$5) | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>12:59 |
| S138 | 161  | (hafnium near2 nitride "hf.N"<br>"Hf.N.sub.") near10 (gate<br>electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>13:03 |
| S137 | 161  | (hafnium near2 nitride "hf.<br>N") near10 (gate electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>13:03 |
| S139 | 415  | (hafnium and nitride) with (ratio percent\$5 "%")  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>13:04 |
| S141 | 170  | S139 and S140  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>13:05 |
| S140 | 646  | ((hafnium and (nitrogen ("N. sub."))) with (ratio percent\$5 "%"))   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR                  | ON      | 2008/03/26<br>13:05 |

| S142 | 961  | ((hafnium and (nitrogen ("N. sub."))) with (ratio percent\$5 "%")) or ("Hf.sub.3")                          | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:12 |
|------|------|---|---|----|----|---------------------|
| S143 | 7    | S142 and (hafnium near2<br>nitride) with (gate near2<br>electrode)  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:13 |
| S144 | 2587 | (hafnium near2 nitride) or<br>("Hf.sub.3" "Hf.sub." "Hf.sub.<br>N") with (ration atom\$3<br>percent\$5 "%") | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:15 |
| S146 | 68   | S144 and S145   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:16 |
| S145 | 68   | (hafnium near2 nitride) with (gate near2 electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:16 |
| S148 | 68   | S147 and S145   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:18 |
| S147 | 2590 | (hafnium near2 nitride) or<br>("Hf.sub.3" "Hf.sub." "Hf.sub.<br>N") with (ratio atom\$3<br>percent\$5 "%")  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:18 |
| S149 | 42   | ("Hf.sub.3N.sub.4")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:21 |
| S150 | 92   | ("Hf.sub.3N.sub.4" "HfN.sub.<br>x")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:24 |

| S151 | 1   | ("Hf.sub.3N.sub.4" "HfN.sub.<br>x") and (nitrogen near2 ratio<br>near2 "Hf")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:27 |
|------|-----|--|---|----|----|---------------------|
| S152 | 25  | ("Hf.sub.3N.sub.4" "HfN.sub.<br>x") and (nitrogen near6<br>(hafnium "Hf") )  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:28 |
| S153 | 12  | ("HfN.sub.x") and (nitrogen<br>near6 (hafnium "Hf") )  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:30 |
| S154 | 14  | ("HfN.sub.x") and (("N.<br>sub.2" nitrogen) near6<br>(hafnium "Hf") )  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:32 |
| S155 | 10  | (metal near2 (gate<br>electrode)) and (("N.sub.2"<br>nitrogen) near6 (hafnium<br>"Hf")) and (hafnium near2<br>nitride) near5 (gate near2<br>electrode) | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:34 |
| S156 | 44  | (hafnium near2 nitride "Hf.<br>sub." "Hf.sub.N") near10<br>(gate adj electrode)  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:38 |
| S157 | 5   | (hafnium near2 nitride)<br>near5 (cap\$3)  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>13:43 |
| S158 | 364 | (hafnium near2 nitride) and CMOS   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>14:06 |
| S160 | 175 | S159 and<br>(@ad< "20040317")  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>14:12 |

| S159 | 498    | (hafnium near2 nitride<br>"HfN") and (CMOS)  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:12 |
|------|--------|--|---|----|-----|---------------------|
| S161 | 488691 | (("438") or ("257")).CLAS.   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2008/03/26<br>14:53 |
| S165 | 369    | S164 and<br>(@ad<"20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:54 |
| S164 | 854    | (hafnium near2 nitride) and<br>S161  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:54 |
| S163 | 0      | (hafnium near2 nitride<br>"HfN") with (caping near2<br>layer)                                | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:54 |
| S168 | 257    | S167 and<br>(@ad< "20040317")  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:56 |
| S167 | 742    | S164 not S160  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>14:56 |
| S169 | 9      | ("HfN.sub." hafnium near2<br>nitride) with (gate near2<br>electrode) and<br>(@ad<"20040317") | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>16:12 |
| S170 | 69     | ("HfN.sub.x" hafnium near2<br>nitride) with (gate near2<br>electrode)                        | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>16:13 |

| S171 | 68   | ("HfN.sub" hafnium near2<br>nitride) with (gate near2<br>electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:17 |
|------|------|---|---|----|----|---------------------|
| S172 | 1535 | (hafnium Hf) with (gas<br>precursor) and (nitride "N.<br>sub.2") and (gate near2<br>electrode)                                    | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:22 |
| S174 | 636  | S173 and<br>(@ad< "20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:23 |
| S173 | 1222 | (hafnium Hf) with (gas<br>precursor) and (nitrogen "N.<br>sub.2") and (gate near2<br>electrode)                                   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:23 |
| S176 | 148  | S175 and<br>(@ad< "20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:24 |
| S175 | 296  | (hafnium Hf) with (gas<br>precursor) with (nitrogen "N.<br>sub.2") and (gate near2<br>electrode)                                  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:24 |
| S177 | 372  | (hafnium near2 nitride) and<br>(hafnium and nitrogen "N.<br>sub.2") and (gate near2<br>electrode)                                 | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:35 |
| S178 | 141  | S177 and<br>(@ad< "20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>16:36 |
| S179 | 265  | (hafnium adj nitride HfN\$3)<br>same (gate electrode) and<br>(nitrogen "N.sub.2" "N:Hf"<br>"Hf:N") and (ratio pertenct\$5<br>"%") | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON | 2008/03/26<br>17:17 |

| S180 | 63    | (hafnium adj nitride HfN\$3)<br>same (gate electrode) and<br>(nitrogen "N.sub.2" "N:Hf"<br>"Hf:N") with (ratio pertenct<br>\$5 "%")              | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:19 |
|------|-------|--|---|----|-----|---------------------|
| S181 | 2     | ("6,225,168").PN.  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2008/03/26<br>17:22 |
| S182 | 66    | (hafnium adj nitride HfN\$3)<br>same (gate electrode) and<br>(nitrogen "N.sub.2" "N:Hf"<br>"Hf:N" "Hf/N" "N/Hf") with<br>(ratio pertenct\$5 "%") | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:31 |
| S183 | 3     | S182 not S180  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:36 |
| S185 | 3028  | (nitrogen "N.sub.2" "N:Hf"<br>"Hf:N") with (ratio pertenct<br>\$5 "%") and (gate adj<br>electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:37 |
| S184 | 79    | (hafnium adj nitride HfN\$3)<br>and (nitrogen "N.sub.2" "N:<br>Hf" "Hf:N") with (ratio<br>pertenct\$5 "%") and (gate<br>adj electrode)           | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:37 |
| S188 | 141   | S187 and (hafnium near2<br>nitride "HfN")  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:38 |
| S187 | 10500 | S186 and<br>(@ad<"20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:38 |
| S186 | 14846 | (gate electrode) and<br>(nitrogen "N.sub.2" "N:Hf"<br>"Hf:N" "Hf/N" "N/Hf") with<br>(ratio pertenct\$5 "%")                                      | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/26<br>17:38 |

| L2 | 1571 | 1 and (@ad<"20040317")   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/27<br>10:51 |
|----|------|--|---|----|-----|---------------------|
| L1 | 2372 | (hafnium near2 nitride<br>"HfN") near20 (metal "TiN"<br>"TaN") | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/27<br>10:51 |
| L4 | 817  | 2 and (gate electrode)   | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/27<br>10:52 |
| Ш  | 0    | 2 and (gate near2 eletrode)                                    | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | ON  | 2008/03/27<br>10:52 |
| L5 | 2    | ("7019351").PN.  | US-PGPUB;<br>USPAT; USOCR;<br>FPRS; EPO;<br>JPO;<br>DERWENT;<br>IBM_TDB | OR | OFF | 2008/03/27<br>12:58 |

3/27/2008 3:54:00 PM

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